

## **NOAA Fisheries, Pacific Islands Fisheries Science Center Lobster Research Plans: 2007**

Pursuant to a court order this document describes the NOAA Fisheries, Pacific Islands Fisheries Science Center's (PIFSC) plans for NWHI lobster research in 2007. Descriptions are provided for only the field component of the research plans, as instructed by the court, and include the annual NWHI lobster resource survey and research charters.

### **1. Pacific Islands Fisheries Science Center Annual NWHI Lobster Resource Survey**

A fishery-independent trap survey has been conducted annually from 1984 to 1989, and 1991 to 2006 by the PIFSC to (1) evaluate the performance of commercial and research survey gear, (2) calibrate gear types, and (3) monitor local populations of lobster in the NWHI. The survey has also been used as a platform for short-term experiments (e.g., studies of handling mortality) and the collection of biological and oceanographic data. PIFSC plans to conduct the 2007 survey from June 12 to July 11, and sampling at this time is limited to Necker Island and Maro Reef. If feasible sampling may be expanded to Gardner Pinnacles.

The survey will use a fixed-site design stratified by depth and at each site shallow (< 20 fathoms) and deep ( $\geq$  20 fathoms) stations will be sampled. Ten strings of 8 traps each will be set at the shallow station and two to four strings of 20 traps each will be set at the deep station. Traps will be fished overnight and baited with 1.5-2.0 pounds of cut-up, previously frozen, mackerel. Data on species, tail width, sex, and reproductive condition (berried or unberried) will be collected for each lobster caught, as well as the latitude and longitude of the traps, recorded at the string level. The majority of lobsters caught during the 2006 survey will be returned alive to the sea floor. A small number (< 250) may be brought back to the laboratory for further processing.

### **2. NWHI Spiny and Slipper Lobster Research Charter**

In 1998 a spiny lobster tagging experiment was implemented at Necker Island to provide independent estimates of population size and updated estimates of population dynamics parameters. Approximately 6000 spiny lobsters were tagged and released at Necker Island and about 320 tagged lobsters were recaptured during the 1999 NWHI commercial lobster fishery. The experiment prematurely ended in 2000 due to funding shortfalls, but was reinitiated in 2002 using research charters. In 2002, two vessels were chartered to conduct the tagging experiments and approximately 14,000 spiny lobster were tagged and released at Necker Island. In 2003, two vessels were again chartered to conduct tagging experiments and all non-tagged captured lobsters were tagged and released, and all previously tagged lobsters captured in the experiment were noted and released. Approximately 12,000 spiny lobster were tagged and released at Necker Island in 2003, while approximately 2,700 slipper lobster were tagged and released at Maro Reef. In 2006, the scope of the project increased and lobster tagging research was initiated at Gardner Pinnacles and Laysan Island. Additional tag and recapture data are necessary to advance our lobster population models and determine their status in the NWHI ecosystem.

The PIFSC plans to continue the Necker Island, Maro Reef, Gardner Pinnacles, and

Laysan Island lobster tagging experiments in 2007 using research charters to provide tagging and recapture data for parameter estimation. Two fishing vessels will be chartered to fish approximately 300 traps per day at Necker Island, Maro Reef, Gardner Pinnacles, and Laysan Island. Data on tail width, sex, and reproductive condition will be collected from each lobster caught, as well as spatial position of the traps by biological technicians. The majority of lobsters caught during the 2006 research charter will be returned alive to the sea floor. A small number (< 250) may be brought back to the laboratory for further processing.